

ABSTRACT OF THE DISCLOSURE

A signal processor for use in an electronic compass for controlling an offset voltage generated in an analog signal process and automatically controlling an amplification gain. In the signal processor, an analog signal processor 52 amplifies signals S_x and S_y , and controls an offset voltage and amplitude A generated during an amplification process. An analog/digital (AD) converter 53 converts analog signals V_{adc_x} and V_{adc_y} from the analog signal processor 52 into a digital signal. A digital signal processor 54 measures a maximum value V_{adc_max} and a minimum value V_{adc_min} associated with the digital signal from the AD converter 53, and outputs, to the analog signal processor 52, the offset control signal S_{oc} and the gain control signal S_{gc} based on the maximum value V_{adc_max} and minimum value V_{adc_min} . The signal processor can maintain levels of signals, to be inputted into the AD converter, to be within a reference voltage range.